

**SECTION 3: REGIONAL SETTING,  
BACKGROUND INFORMATION, &  
DEMOGRAPHIC SUMMARY**

## PHYSIOGRAPHIC BACKGROUND

Utah's three most northern counties of Box Elder, Cache and Rich comprise the Bear River Region. The region is spread over 7,900 square miles and borders three states; Nevada, Idaho, and Wyoming. Several important regional connections exist between all three counties and the bordering Idaho counties (Franklin, Oneida, and Bear Lake) to the north. Shared geographic, geological, natural, and social-cultural connections are important when considering natural hazards, pre-disaster mitigation, and emergency response and communications planning. Efforts should be

Cache County, out of Cutler Dam, and eventually deposits its waters into the Great Salt Lake. Fifty-five to 60 percent of the Great Salt Lake and its wetlands are found within Box Elder County, and the lake itself covers 8-20 percent of the county, depending on yearly precipitation totals (Box Elder County Comprehensive Wetlands Management Plan, 1999).

Cache County covers approximately 1,174 square miles and is bordered by the Wellsville Mountains on the west and the Bear River Range on the east. Approximately 239,000 acres are cropland and pasture land, 280,000 acres are



coordinated between counties as much as possible to protect the public from natural hazard risks.

Box Elder County comprises 5,594 square miles and is bordered on the east by the Wellsville Mountains, Cache County, and Weber County. The Great Salt Lake and the salt flats can be found extending into the county from the south end. The county borders Nevada to the west and Idaho to the north. Several small ranching communities also occupy this county. The western geography is mainly rolling ranch land and small rural communities, while the eastern side connects to the populated Wasatch Front. The largest fresh water feature is the Bear River that flows from

range and woodland, and nearly 230,000 acres are part of the Cache National Forest (Cache County Resource Assessment, 2011). The northern edge of the county connects to Franklin County, Idaho, and both counties are traditionally termed "Cache Valley." Prominent streams include the Little Bear, Blacksmith Fork, and the Logan Rivers to the south, and the Bear and Cub Rivers in the north. The western, low lying portion of county is composed of the Cutler Marsh. The 10,000 square acre wetland area signifies the confluence of the county's southern and eastern rivers and streams with the Bear River from the north prior to its passage through Cutler Dam. Porcupine, Cutler, Newton and Hiram Reservoirs are all irrigation-

based reservoirs in the county. The “bench” is an elongated plateau that surrounds the valley; formed by fluctuating shorelines of ancient Lake Bonneville.

Rich County comprises 1,022 square miles and is bordered on the west and south by the Bear River and Monte Cristo Ranges and on the east by the Crawford Mountain Range and the rolling desert highlands of southwestern Wyoming. To the north are the uplands and the mountain ranges of southeastern Idaho. Bear Lake is the largest water body in the county that extends 20 miles in length and 8 miles in width. Forty-four percent of Rich County is administered by federal and state agencies.

### Climate

Elevations in the region vary from 4,200 to 9,979 feet, which is the elevation of the region’s highest peak, Naomi Peak in Cache County. Annual precipitation ranges from 9 inches to over 40 inches. The high mountain valleys experience long cold winters and short cool summers. The Bear River Region experiences everything from rainstorms, snow, sleet, hail, high winds, and cold temperatures, to hot summer days and drought. During winter months, valley’s experience fog and colder temperatures in low elevations and regular winds and increasing snow pack at higher elevations. During the summer months, temperatures can remain above 100° F for weeks, and drought can be problematic for farmers and ranchers.

Rich County has some of the most severe winters in the state. An early settler, J. Golden Kimball, described the climate as “nine months of winter and three months of late fall.” Woodruff is one of the coldest towns in the state, with their lowest yearly temperature of -50° F in 1899.

### Geology

The region is home to the Wellsville Mountain Range and the Bear River Range. Notable physiographic features of the region include: the Crawford Mountain, Bear Lake Plateau, Goose Creek/Raft River Mountains, Curlew Valley, Hansel Mountains-Blue Springs Hills, Great Salt

Lake Desert, Lakeside Section and the Clarkston Mountain/Junction Hills (Stokes, 1988).

The Wellsville Range is east of Brigham City and is known for its long, upward-faulted ridge of Precambrian metamorphic rocks covered by Paleozoic aged sedimentary rocks.

The Paleozoic section of the rock sequence is quite consistent throughout this area with sandstone on bottom, shale, and finally limestone or dolomite. Most of the rocks are of marine or near shore deposits from the ancient Lake Bonneville. The Wasatch Fault is evident in the western edge of the Wellsville Mountain Range with the eastern portion lifted thousands of feet than the western edge. The Eastern portion is comprised of mainly Pennsylvanian and Permian aged rocks. Cache Valley is a dropped portion between the East Cache Fault and the Bear River Range. The Cache Valley was once an arm of Lake Bonneville. Logan Canyon is made up of Paleozoic and Tertiary rocks with the same sequence as mentioned above. The Bear River Range is situated on the east of the western extent of the Middle Rocky Mountain Physiographic Province. The Overthrust Belt Geologic Province is what uplifted these mountains about 50 million years ago. The Intermountain Seismic Belt is a result of the Overthrust Belt. “The Intermountain Seismic Belt forms a boundary between the Basin and Range and the Middle Rocky Mountain Physiographic provinces” (Mabey, 1999). The older Paleozoic and Mesozoic rocks are visible above the younger Tertiary and Quaternary aged sedimentary rocks because of the many visible faults in this zone. One can see these geological formations from the Bear River Range to the east are part of the Great Basin Physiographic province, which consists of mainly Quaternary age surface deposits such as alluvium, terrace deposits, sand dunes, and lake bed sediments.

Rich County is home to portions of both the Bear Lake and Bear River Valleys. Bear Lake Valley is considered to be an east tilted half graben, with faults on either side of the valley (Covington, 2008).

The soil morphology in this region is characterized by deep to very deep well drained

soils. Down cutting from the Bear River and its tributaries have resulted in massive erosion. Soils on old lake bottoms in the middle of Cache and Salt Lake valleys are nearly level, moderately well to poorly drained, very deep, and derived from lacustrine and alluvial deposits (Department of Landscape Architecture and Environmental Planning USU, 2001).

### Environmental and Recreational Amenities

The Bear River Region has much to offer as far as environmental and recreational amenities. Located in Northern Utah, many of the jurisdictions within the three counties are settled around the Rocky Mountain Region. Agriculture and grazing play a large role in Rich, Cache, and Box Elder counties.

In the region, there are many public and state parks that offer a variety of environmental and recreational amenities. There are various opportunities for recreation that are found in this region: reservoirs, fishing, hiking trails, camping and picnic areas, hunting, wildlife watching, etc.

Modern society places increasing emphasis on the availability of good quality recreational amenities, which are seen as beneficial to the physical and mental health and quality of life of the population. The provision of recreational facilities has also been shown to reduce crime and vandalism, positively effect community economics, and contribute to the development of stable communities.

Within the Region there are many reservoirs that provide outdoor recreation. Notable is Bear Lake State Park in Rich County. It is the largest freshwater lake in the region, spanning 8 miles wide and 20 miles long. There are many summer resorts situated around its shores. Boating, water sports, and fishing are a few of many activities enjoyed at this lake. Hyrum State Park as well as Willard Bay State Park offer many recreational activities. A majority of the reservoirs in the region also offer day use picnic areas as well as some campgrounds and facilities.

Several of the most notable environmental amenities in the region are the Bear River Migratory Bird Refuge just north of Willard Bay.

In Cache County in the blacksmith fork canyon there is a wildlife preserve area for elk at Hardware Ranch. Cutler marsh in Cache Valley is also a large contributor to wildlife habitats and unique Rocky Mountain ecosystems. These amenities as well as others found in the region provide wonderful opportunities for wildlife viewing.

Along the Logan Canyon Scenic Byway in Cache County, there are countless outdoor recreational opportunities. Popular hiking trails include the Wind Caves, the Logan River Trail, and many others. There are also 3 fishing dams, many rock climbing areas, 13 campgrounds, and many day use areas along the way.

Fishing is also a popular past-time, with the Logan River located just east of Logan, and the Blacksmith Fork River located east of Hyrum, which are known for their year round fly fishing for trout and whitefish. Bear Lake also has five indigenous fish species, including the Bear Lake strain of the Bonneville Cutthroat Trout and Bonneville Cisco. There are also large Mackinaw Salmon populations in the lake.

## **REGIONAL DEMOGRAPHIC SUMMARY**

### Population Growth and Community Development

The total population for the Bear River Region (Box Elder, Cache, and Rich Counties combined) is approximately 169,991. The regions population grew by 9% between 2009 to 2013 (US Census Bureau, 2013).

Box Elder County had an estimated growth rate of 1.8% for the period of 2009 to 2013 (1,358 additional residents for a total of 50,864 people in 2013). Elwood city had the largest percent of growth in the county population overall with a 16% increase, adding 145 residents. Garland City grew at a rate of 15% adding 316 new residents to the county. Perry City also had an increase of 15% and makes up the county's largest population growth with 581 new residents. The rest of the municipalities grew at a rate under 15%. (US Census Bureau, 2013).

Many of the jurisdictions in Box Elder County may continue to experience high future growth rates, due to their proximity to Weber County.

This portion of the Wasatch Front affords views of the Great Salt Lake, prominent mountain ranges, and parallels Interstate 15. As development from North Ogden and Pleasant View continues to move to the north, southern Box Elder County communities will most likely be utilized by nearby communities to provide housing for those who work along the Wasatch Front.

Cache County grew at an estimated rate of 1.4% from 2009 to 2013 (5,099 people added for a total of 116,909 people in 2013). Astonishingly, Nibley City had a 28% growth in the same period with 1,333 new people, which was the highest growth percentage in the region. North Logan City grew at a rate of 14%, while River Heights grew 8%. All other municipalities in the county grew at a rate lower than 8%. (US Census Bureau Estimates, 2013). One other factor to consider regarding population growth in Cache County is the presence of Utah State University, which currently has an enrolment of 27,662 part and full-time students, with around 13,383 attending school on the Logan, Utah Campus (USU, 2014). Many of these students are not technically considered residents of Cache County or Logan City, since tax and other information most likely remains in their home town.

Cache County is also the only county in the Bear River Region with a Metropolitan Planning Organization (MPO). These MPO's are required for any metropolitan area with more than 50,000 people, in order for jurisdictions to be eligible for federal assistance. The CMPO is responsible for transportation planning in the communities of Smithfield, Hyde Park, North Logan, Logan, River Heights, Providence, Millville, and parts of Nibley and the unincorporated areas of the county.

Rich County had the largest growth between the three counties at an estimated average growth rate of 5.9% from 2009 to 2013, adding 160 residents. Considering the amount of second homes that came to the county during that time, this number seems low. Rich County is home to Bear Lake, a large freshwater body which attracts visitors and cabin/second home development along the western edge of the lake. Laketown had the most growth at 36%, adding 68 residents, and Garden City grew 23% with 108 residents. Woodruff

and Randolph both were reported as having slight population loss (US Census Bureau, 2013).

Considerations for Rich County population growth in the future should include the impact of cabin and second home development, and the possibility of homes becoming permanent residences. The US Census Bureau requires 9 months of residency for people to be considered residents of a jurisdiction. Many of the homes in the Bear Lake area are only used for weeks or several months in the summer. Second home and seasonal home ownership in Rich County is estimated to be around 75%. Infrastructure needs and services are still required by the municipalities or by the county for these residences.

### Community and Economic Development Profile

#### *Box Elder County*

Box Elder County experienced substantial economic issues in for several years following the Great Recession in 2008. This included job loss, business closures, and other issues. The county was considered an economically distressed area by the US Economic Development Administration (EDA) based on per-capita income levels. However, over the past several years the county has slowly recovered. According to the Department of Workforce Services, 2013 ended well with job growth at 4.5%. Unemployment was at 5.1% at the end of 2013, but has been steadily declining. with new jobs totalling 723. Mining grew most significantly by 45.9% from 2012 to 2013. Manufacturing still makes up the majority of the non-farm employment industry, with trade, transportation, and industry coming in second (Utah Department of Workforce Services, 2015). Agricultural production is still a key economic driver in Box Elder County.

Box Elder County per capita personal income in 2013 was \$32,461, compared to the national per capita personal income for the same year of 44,765 (BRAG CEDS, 2013). Residents below poverty line accounted for 8.8% of the population in the county in 2013 (US Census Bureau, 2013). As of March, 2015, unemployment in the county was only 3.6%, compared with the national unemployment rate of 5.5% for the same month

(Utah Department of Workforce Services, 2015 and US Bureau of Labor Statistics, 2015).

Most of the residential development in Box Elder County occurred in Perry, Brigham City, and Tremonton. All other communities experienced growth except for Mantua, Fielding, and Snowville. In the unincorporated areas of the county such as the south Willard area, development also increased, which may lead to increased need for sewer and other types of critical infrastructure. Industrial growth is occurring in west Brigham City, Bear River City, and Corinne. West of Corinne is an existing Agricultural Industrial Park, and the new Proctor and Gamble facility is being built west of Bear River City, with sewer and water provided by Brigham City.

### ***Cache County***

Cache County's largest employer is Utah State University at 7,000-10,000 employees, which contributes to government being the largest industry in non-farm employment in the county. Cache School District is second, with 2,000-3,000 employees. While the county's workforce has underemployment and low wage issues, the general economy has been stable, with 881 jobs created in 2012-2013. Education, Health, and Social Services was the industry with the highest number of new jobs, while the Financial Activities sector grew the most by percentage at 12%. New employment was positive but modest at 1.7%, and unemployment was at 3.6% during the same period (Utah Department of Workforce Services, 2013). Logan City has a fairly high number of residents living below the poverty level at about 28.3% in 2013 (US Census Bureau, 2013).

Cache County's per capita personal income in 2013 was \$31,149. In 2013, 16.6% of the population was below the poverty line. The unemployment rate averaged only 2.7% for March of 2015 (Utah Department of Workforce Services, 2015).

New development in Cache County has increased dramatically in areas such as Nibley, Providence, North Logan, and Mendon. Logan has also grown substantially over the past few years, particularly on the west side of the city.

Commercial growth has also been steady with new businesses near 1400 North in Logan.

### ***Rich County***

Rich County has the lowest unemployment rate in the region at 3.5%, which is steadily declining. Government is the largest employment sector, while Leisure and Hospitality is close behind. The Professional and Business Services sector grew the most by percentage at 136.9% in 2012, adding 27 new jobs to the economy. Leisure and Hospitality grew by 29 jobs at 22.3%. Agriculture, specifically cattle ranching, is a substantial economic staple in Rich County. While the local school district and other types of government jobs account for the largest employers in the area, the next largest employer is Deseret Land and Livestock, owned by The Church of Jesus Christ of Latter-day Saints, employs around 20-50 people (Utah Department of Workforce Services, 2013).

Rich County has many economic opportunities in the area of recreation and tourism sector due to Bear Lake, a large freshwater lake on the Utah/Idaho border referred to as The Caribbean of the Rockies. However, incomes based on seasonal tourism in the region have not provided a stable economic situation for residents. Income in the winter months is difficult to attain when part-time residents leave the cold winters of the area. Of all the residences in Rich County, around 75% of all homes are seasonally occupied.

Mining and manufacturing tends to give higher wages in the county. Rich county wages increased by 20% between 2009 and 2013, and per capita personal income in Rich County for 2013 was 38,030. About 7% of county residents were below the poverty line in 2013 (BRAG CEDS, 2015). Unemployment in March of 2015 was at 3% (Utah Department of Workforce Services, 2015).

Residential development in Rich County has mainly been in the form of second homes and seasonal cabins. Garden City is the only municipality that has seen recent growth in the county. Several other large developments are being planned in the area, and could prove to increase

### **Table 5: NFIP Participation**

<b>National Flood Insurance Program (NFIP) Participation and Flood Data/Status</b>						
	<b>Community Name</b>	<b>CID</b>	<b>Date of Entry</b>	<b>Current Effective Map</b>	<b>Online FIRM?</b>	<b>GIS Data Available**</b>
<b>BOX ELDER COUNTY</b>	Bear River, City of	490194#	9/29/2010	9/29/2010	Y	Y
	Box Elder County *	490005#	09/01/87 (R)	09/01/87 (L)	Y	Y
	Brigham City, City of	490006#	08/17/81 (R)	8/17/1981	Y	Y
	Corinne, City of	490197#	07/15/80 (R)	07/15/80 (M)	Y	Y
	<i>Deweyville</i>	<b><u>NOT PARTICIPATING</u></b>				
	<i>Elwood</i>	<b><u>NOT PARTICIPATING</u></b>				
	<i>Fielding</i>	<b><u>NOT PARTICIPATING</u></b>				
	Garland, City of	490207#	9/29/2010	9/30/2011	Y	Y
	Honeyville, City of	490008#	07/29/80 (R)	07/29/80 (M)	Y	Y
	<i>Howell</i>	<b><u>NOT PARTICIPATING</u></b>				
	Mantua, Town of	490009#	07/08/80 (R)	07/08/80 (M)	Y	Y
	Perry City, City of	490010#	05/20/80 (R)	05/20/80 (M)	Y	Y
	<i>Plymouth</i>	<b><u>NOT PARTICIPATING</u></b>				
	<i>Portage</i>	<b><u>NOT PARTICIPATING</u></b>				
	<i>Snowville</i>	<b><u>NOT PARTICIPATING</u></b>				
	Tremonton, City of	490220#	9/29/2010	6/24/2011	Y	Y
Willard, City of	490011	07/01/87 (R)	07/01/87 (L)	Y	Y	
<b>CACHE COUNTY</b>	<i>Amalga</i>	<b><u>NOT PARTICIPATING</u></b>				
	Cache County*	490012#	02/01/87 (R)	02/01/87 (L)	Y	Y
	Clarkston, Town of	490014#	08/19/80 (R)	08/19/80 (M)	Y	Y
	<i>Cornish</i>	<b><u>NOT PARTICIPATING</u></b>				
	Hyde Park, Town of	490016#	07/29/80 (R)	07/29/80 (M)	Y	Y
	Hyrum, City of	490017#	04/08/80 (R)	04/08/80 (M)	Y	Y
	Lewiston, City of	490018#	07/29/80 (R)	07/29/80 (M)	Y	Y
	Logan, City of	490019#	09/28/84 (R)	9/28/1984	Y	Y
	Mendon, City of	490020 #	07/22/80 (R)	07/22/80 (M)	Y	Y
	Millville, Town of	490021	03/13/85 (E)	10/22/1976	Y	N
	Newton, Town of	490022#	07/22/80 (R)	07/22/80 (M)	Y	Y
	Nibley, Town of	490023	08/05/86 (R)	08/05/86 (M)	Y	N
	North Logan, City of	490024#	03/18/86 (R)	03/18/86 (M)	Y	Y
	Paradise, Town of	490025#	5/24/2011	12/7/2011	Y	Y
	Providence, City of	490226	02/02/84 (R)	(NSFHA)	N	N
	Richmond, City of	490027#	08/12/80 (R)	08/12/80 (M)	Y	Y
	River Heights, City of	490240#	5/24/2011	5/24/2011	Y	Y
	Smithfield, City of	490029#	03/18/86 (R)	03/18/86 (M)	Y	Y
<i>Trenton</i>	<b><u>NOT PARTICIPATING</u></b>					
Wellsville, City of	490031#	07/29/80 (R)	07/29/80 (M)	Y	Y	
<b>RICH COUNTY</b>	<i>Garden City</i>	<b><u>NO INFORMATION AVAILABLE</u></b>				
	Laketown, Town of	490099	07/15/85 (R)	(NSFHA)	N	N
	<i>Randolph</i>	<b><u>NO INFORMATION AVAILABLE</u></b>				
	Rich County	490234	2011		N	N
Woodruff, Town of	490101#	07/22/80 (R)	07/22/80 (M)	Y	N	

Source: Federal Emergency Management Agency (FEMA) National Flood Insurance Program, 2015

\* Unincorporated areas only

\*\* (GIS) Geographic Information Systems (Mapping and geographic analysis software)

(E) Emergency Program or (R) Regular Program

(NSFHA) No Special Flood Hazard Area

## NFIP PARTICIPATION & BUILDING CODE REPORTS

### National Flood Insurance Program Participation

The National Flood Insurance Program was created in 1968 by the Federal Emergency Management Agency (FEMA) to provide homeowners living in the 100-year floodplain an opportunity to purchase flood insurance for their home. In order for individuals to be eligible to purchase flood insurance, their community needs to be a member of the National Flood Insurance Program (NFIP). It is fairly simple to join the NFIP with help from the State Floodplain Manager. There is also limited funding for flood mitigation projects for communities that are members of the NFIP. There are 30 jurisdictions out of 42 in the Bear River Region participating in the NFIP (See Table 4 above for details).

Those communities listed in Table 4 above comply with the minimum standards required by FEMA to be considered participating jurisdictions.

### Building Code Effectiveness Grading Reports (BCEGS)

The Building Code Effectiveness Grading Report was implemented in 1995 to evaluate current building codes in a particular community and to determine how well the community enforces its building codes. This program assigns each municipality a grade of one to ten, with one showing excellent commitment to building code enforcement. The concept of the Building Code Effectiveness Grading Reports is that communities with effective, well-enforced building codes should sustain less damage in the event of a natural disaster, and insurance rates can be adjusted accordingly. More information on what determines a community’s score can be found at: <http://www.isomitigation.com/bcegs/0000/bcegs0003.html>.

Building Code Effectiveness Grading Report (BCEGS) Scores for the Bear River Region (2008)		
Jurisdiction Name	Score	Date
Box Elder County	RES 04 COM 04	2001
Brigham City	RES 03 COM 03	2001
Tremonton	RES 05 COM 05	2000
Willard	RES 05 COM 05	1998
Cache County	RES 03 COM 03	2001
Hyde Park	RES 03 COM 03	2001
Logan City	RES 03 COM 03	1999
North Logan	RES 03 COM 03	1999
Smithfield	RES 04 COM 04	2000
Garden City	RES 99 COM 07	1998

Source: ISO (Insurance Services Office), 2008.

99 is used for jurisdictions which are either unclassified or do not meet the minimum criteria of the BCEGS program. This would include departments which do not do plan review, inspections, have legally adopted codes or have declined to participate in the ISO program.

**Table 6:** BCEGS Scores - Bear River Region